Alan Dutton

Professional Summary

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Dr. Dutton has more than 25 years of experience in hydrogeology with emphasis in the areas of basin-scale and watershed-scale flow of groundwater; numerical modeling of groundwater resources; assessment and mapping of contaminant plumes associated with crude oil and natural gas production sites; unsaturated-zone flow; environmental site assessment; natural geochemical controls on water-quality variation; and paleohydrology. He developed and worked on computer models of groundwater resources in the Edwards aquifer, central Carrizo-Wilcox aquifer, Ogallala aquifer, Trinity and Woodbine aquifers, and part of the Gulf Coast aquifer. He has given expert witness testimony for State of Texas on groundwater issues related to siting a low-level radioactive waste repository. Dr. Dutton is senior author on >5 major published reports, >16 articles in peer-reviewed technical journals and proceedings, and numerous contract reports in hydrogeology and modeling of aquifers.

Academic Background

Ph.D. Geology, The University of Texas at Austin, 1982
B.A., With High Distinction, Geology, University of Rochester, 1975

Additional Education

Groundwater Computer Models, University of Wisconsin-Extension, January 1984
Field Hydrology Course, University of Arizona, May-June 1978
University of Chicago, Department of Geophysical Sciences, Fall 1975

Professional Work Experience

Present Position: Interim Chair (Fall 2007 – Present), Associate Professor (Fall 2004 – Present), Dept. of Geological Sciences, The University of Texas at San Antonio. Course work includes

- GEO 1103 Introduction to Earth Systems (undergraduate)
- GEO 4023 Engineering Geology (undergraduate)
- EES 5603 Physical Hydrogeology (graduate)
- EES 5713 (5703) Advanced Hydrogeology—Groundwater Modeling (graduate)
- EES 5981 Seminar in Environmental Science & Engineering (graduate)

Research Scientist, Bureau of Economic Geology, The University of Texas at Austin (1982 – 2004).

Hydrogeology and numerical modeling of Texas aquifers: Ogallala (High Plains) aquifer, Carrizo-Wilcox aquifer, Edwards (Balcones Fault Zone) aquifer, Gulf Coast aquifer; alluvial aquifers.

Hydrology and groundwater age of aquifers beneath the U.S. Great Plains in Texas, New Mexico, Oklahoma, Kansas, Wyoming, and Nebraska.

Hydrogeologic issues and expert-witness testimony related to siting a low-level radioactive-waste disposal site.

Regional hydrogeology and origin of brine in the Permian Basin.

Hydrogeology of production of coalbed natural gas, including application of computer models of water-resources.

Hydrological and environmental assessment of subsurface crude oil and saltwater contamination at oil and gas exploration and production sites.

C. Research Associate, Research and Planning Consultants, Austin, Texas (February 1976 - October 1977).

Study of environmental effects of energy development on the continental shelf and of related industrial growth in the coastal zone of Texas.

D. Teaching Assistant, University of Chicago (Fall 1975).

Taught laboratory section on physical geology.

E. Laboratory Assistant, University of Chicago (Summer 1974 - Summer 1975).

Morphometric analysis and electrophoresis of bryozoan colonies; research conducted at Marine Biological Laboratory, Woods Hole, Massachusetts.

F. Teaching Assistant, Department of Geology, University of Rochester (September 1974 - May 1975).

Teaching laboratory and recitation sections of physical and historical geology.

Professional Societies

Geological Society of America, Fellow
American Geophysical Union, Member
National Ground Water Association, Member
South Texas Geological Society, Member

Professional Registrations

Licensed Professional Geoscientist, State of Texas, registration number 900.

Awards and Honorary Societies

Bernold M. "Bruno" Hansen DEG Excellence of Presentation Award, 1997 Annual Meeting, American Association of Petroleum Geologists, Division of Environmental Geosciences, 1997

Fellowship, Texas Power and Light, 1979 - 1981

Publications

Articles

Dutton, A. R., Nicot, J.-P., and Kier, K. S., 2006, Hydrodynamic convergence of hydropressured and geopressured zones, Central Texas, Gulf of Mexico Basin, USA: Hydrogeology Journal, v. 14, p. 859-867.

Dutton, A. R., Harden, Robert, and Kier, Katherine S., 2002, Convergence between hydropressured and Geopressured Zones in the Wilcox Group, Central Texas Gulf Coast: Gulf Coast Association of Geological Societies Transactions v. 52, p. 197-206.

Dutton, A. R., Hovorka, S. D., and Bennett, P. C., 2002, Effect of Pleistocene depositional heterogeneity on movement of a subsurface crude-oil spill, San Patricio County, South Texas: Gulf Coast Association of Geological Societies Transactions v. 52, p. 207-216.

Dutton, A. R., and Mace, R. E., 2002, Evolución de los modelos numéricos de flujo de agua subterránea en el acuífero de Ogallala en Texas: Revista Mexicana de Ciencias Geológicas, v. 19, núm. 2, p. 107–120.

Nance, H. S., and Dutton, A. R., 2002, E & P drilling fluid disposal facilities in Texas an Louisiana: Analogs for environmental assessments of abandoned sites: Gulf Coast Association of Geological Societies Transactions v. 52, p. 779-788.

Smyth, R. C., Dutton, A. R., and Gutierrez, Roberto, 2002, Forensic hydrogeology applied to a half-century-old crude oil seep, Colorado River, Wharton County, Texas: Gulf Coast Association of Geological Societies Transactions v. 52, p. 907-917.

Dutton, A. R., Mace, R. E., and Reedy, R. C., 2001, Quantification of spatially varying hydrogeologic properties for a predictive model of groundwater flow in the Ogallala aquifer, northern Texas Panhandle, *in* New Mexico Geological Society Guidebook, 52nd Field Conference, Geology of the Llano Estacado, p. 297–308.

Dutton, A. R., Smyth, R. C., Nance, H. S., Mullican, J. W., and Gu, Yaguang, 2000, History, regulation, and closure of abandoned centralized and commercial drilling-fluid disposal sites in Louisiana, New Mexico, Oklahoma, and Texas, *in* Proceedings, Ground Water Protection Council Annual Forum, p. 133–138.

Smyth, R. C., and Dutton, A. R., 1999, Use of inactive production wells to obtain a variance to area of review requirements for injection well permitting in Texas: Eye on Environment, v. 4, no. 1, p. 1–3.

Mace, R. E., and Dutton, A. R., 1998, Numerical modeling of ground-water flow in the Ogallala aquifer in Texas, *in* Castellanos, J. Z., Carrillo, J. J., and Yanez, C. H., eds., Memoria del Simposio Internacional de Aguas Subterraneas: Sociedad Mexicana de la Ciencia del Suelo, p. 98–109.

Paine, J. G., Dutton, A. R., Hovorka, S. D., Blum, Martina, Mahoney, M., and Sullivan, E. J., 1998, Brine in the near-surface environment: determining salinization extent, identifying sources, and estimating chloride mass using surface, borehole, and airborne EM, *in* Bell, R. S., Powers, M. H., and Larson, Timothy, eds., Proceedings, Symposium on the Application of Geophysics to Environmental and Engineering Problems: Environmental and Engineering Geophysical Society, p. 215–219.

Paine, J. G., Boghici, E. M., Dutton, A. R., and Tweedy, S. W., 1997, Locating salinity sources in West Texas with airborne and ground-based geophysical methods and GIS, *in* Bell, R. S., compiler, Proceedings, Symposium on the Application of Geophysics to Engineering and Environmental Problems, Reno: Environmental and Engineering Geophysical Society, p. 365–371.

Paine, J. G., Dutton, A. R., Mayorga, J. S., and Saunders, G. P., 1997, Identifying oil-field salinity sources with airborne and ground-based geophysics: a West Texas example: The Leading Edge, v. 16, no. 11, p. 1603–1607.

Paine, J. G., Dutton, A. R., and Tweedy, S. W., 1997, Combining high resolution airborne and ground-based geophysical methods to identify salinity sources in West Texas, *in* Sternberg, Ben, General Chairman, Proceedings, The High-Resolution Geophysics Workshop: The University of Arizona, Department of Mining and Geological Engineering, Laboratory for Advanced Subsurface Imaging, on CD-ROM [5 p.].

Darling, B. K., Hibbs, B. J., Dutton, A. R., and Elam, Jack, 1995, Isotope hydrology of the Eagle Mountains area, Hudspeth County, Texas: implications for development of ground-water resources, *in* Water resources at risk: Denver, American Institute of Hydrology, p. SL-12–SL-23.

Dutton, A. R., 1995, Groundwater isotopic evidence for paleorecharge in U.S. High Plains aquifers: Quaternary Research, v. 43, p. 221–231.

Wang, H. F., Myer, L. R., Witherspoon, P. A., Nelson, P. P., Logan, J. M. and Dutton, A. R., 1994, Abandoned SSC site can provide underground facility for geoscience research: Eos, v. 75, no. 48, p. 561–564.

Dutton, A. R., 1994, Use of aquifer stratigraphy for building numerical models of ground-water flow: case study of the heterogeneous Gulf Coast aquifer in Matagorda and Wharton Counties, Texas: Gulf Coast Association of Geological Societies Transactions, v. 44, p. 185–192.

Dutton, A. R., Laubach, S. E., and Nance, H. S., 1994, Fault and joint measurements in Austin Chalk, Superconducting Super Collider site, Texas: Gulf Coast Association of Geological Societies Transactions, v. 44, p. 521–532.

Mace, R. E., Dutton, A. R., and Nance, H. S., 1994, Simulation of regional ground-water flow on a flowline in Cretaceous-bedrock aquifers of North-Central Texas, *in* Factors affecting water resources: Proceedings, American Water Resources Association, Texas Section, p. 97–106.

Mace, R. E., Dutton, A. R., and Nance, H. S., 1994, Water-level declines in the Woodbine, Paluxy, and Trinity aquifers of North-Central Texas: Gulf Coast Association of Geological Societies Transactions, v. 44, p. 413–420.

Hovorka, S. D., Dutton, A. R., Ruppel, S. C., and Yeh, Joseph, 1994, Sedimentologic and diagenetic controls on aquifer properties, Lower Cretaceous Edwards carbonate aquifer, Texas: implications for aquifer management: Gulf Coast Association of Geological Societies Transactions, v. 44, p. 277–284.

Bein, Amos, and Dutton, A. R., 1993, Origin, distribution, and movement of brine in the Permian Basin (U.S.A.): a model for displacement of connate brine: Geological Society of America Bulletin, v. 105, p. 695–707.

Dutton, A. R., Bein, Amos, and Bennett, P. C., 1993, Distribution of meteoric and connate brines in the Permian Basin area: implications for subsurface bacteria, hydrocarbon degradation, and diagenesis, *in* Gibbs, Julie, and Cromwell, David, eds., New dimensions in the Permian Basin: West Texas Geological Society, Publication No. 93-93, p. 81–98.

Raney, J. A., and Dutton, A. R., 1990, Geologic and geohydrologic studies near Fort Hancock, Texas: recent investigations of the proposed site of the Texas low-level radioactive waste repository: West Texas Geological Society Bulletin, v. 30, no. 4, p. 5–10.

Dutton, A. R., 1990, Vadose-zone recharge and weathering in an Eocene sand deposit, East Texas, U.S.A: Journal of Hydrology, v. 114, p. 93–108.

Dutton, A. R., 1989, Hydrogeochemical processes involved in salt-dissolution zones, Texas Panhandle, U.S.A: Hydrological Processes, v. 3, p. 75–89.

Dutton, A. R., Richter, B. C., and Kreitler, C. W., 1989, Brine discharge and salinization, Concho River watershed, West Texas: Ground Water, v. 27, no. 3, p. 375–383.

Dutton, A. R., and Simpkins, W. W., 1989, Isotopic evidence for paleohydrologic evolution of ground-water flow paths, southern Great Plains, United States: Geology, v. 17, p. 653–656.

Dutton, A. R., 1987, Origin of brine in the San Andres Formation, evaporite confining system, Texas Panhandle and eastern New Mexico: Geological Society of America Bulletin, v. 99, p. 103–112.

Dutton, A. R., Kreitler, C. W., and Gustavson, T. C., 1987, Regional hydrogeologic research in the Palo Duro Basin for nuclear waste repository siting: Bulletin of the Association of Engineering Geologists, v. 24, no. 2, p. 221–225.

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Dutton, A. R., and Kreitler, C. W., 1984, Hydrogeology of the Palo Duro Basin: interactions with the Ogallala aquifer, *in* Whetstone, G. A., ed., Proceedings of the Ogallala Aquifer Symposium, Lubbock, Texas, p. 392–404.

Dutton, A. R., 1983, Regional ground-water flow system of the San Andres Formation, West Texas and eastern New Mexico, *in* Gustavson, T. C., and others, Geology and geohydrology of the Palo Duro Basin, Texas Panhandle, a report on the progress of nuclear waste isolation feasibility studies (1982): The University of Texas at Austin, Bureau of Economic Geology Geological Circular 83-4, p. 97–101.

Dutton, A. R., and Orr, E. D., 1983, An application of geostatistics to determine regional ground-water flow in the San Andres Formation, Texas and New Mexico: Ground Water, v. 21, no. 5, p. 619–624.

Schopf, T. J., and Dutton, A. R., 1976, Parallel clines in morphologic and genetic differentiation in a coastal zone marine invertebrate: the bryozoan Schizoporella errata: Paleobiology, v. 2, no. 3, p. 255–264.

Atlases/Maps/Cross Sections

Hovorka, S. D., and Dutton, A. R., 2001, Aquifers of Texas: The University of Texas at Austin, Bureau of Economic Geology, page-size map, 1 p.

Books, Manuals

Dutton, A. R., editor, 1994, Toxic substances and the hydrologic sciences: Minneapolis, Minnesota, American Institute of Hydrology, 729 p.

Reports, Monographs, Brochures, Pamphlets, Bulletins

Leal, L. R. B., de Silva, A. B., de Lima, O. A. L., da Luz, J. A. G., and Dutton, A. R., 2006, Estudos dos recursos hídricos subterrâneos da bacia do rio Salitre: Contribuições para uso sustentável da água na indústria do Mármore Bege Bahia: Séries Arquivos Abertos, CBPM, Salvador, Brazil, variously paginated.

Lindgren, R J; Dutton, A R; Hovorka, S D; Worthington, S R H; Painter, Scott, 2005, Conceptualization and simulation of the Edwards Aquifer, San Antonio region, Texas, in Kuniansky, E. L., ed., Proceedings U. S. Geological Survey Karst Interest Group, Scientific Investigations Report, Report: SIR 2005-5160, pp.48-57.

Dutton, A. R., and Mehta, Sunil, 2004, Simulation of elevated TDS concentrations in the Ogallala Aquifer, Roberts County, Texas: The University of Texas at Austin, Bureau of Economic Geology, Contract Report prepared for Freese and Nichols, Inc., and Panhandle Water Planning Group, 26 p.

Dutton, A. R., 1999, Groundwater availability in the Carrizo–Wilcox aquifer in Central Texas—numerical simulations of 2000 through 2050 withdrawal projections: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 256, 53 p.

Paine, J. G., Dutton, A. R., and Blum, M. U., 1999, Using airborne geophysics to identify salinization in West Texas: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 257, 69 p.

Hovorka, S. D., Dutton, A. R., Ruppel, S. C., and Yeh, J. S., 1996, Edwards aquifer ground-water resources: geologic controls on porosity development in platform carbonates, South Texas: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 238, 75 p.

Richter, B. C., Dutton, A. R., and Kreitler, C. W., 1990, Identification of sources and mechanisms of salt-water pollution affecting ground-water quality: a case study, West Texas: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 191, 43 p.

Dutton, A. R., 1987 Hydrogeologic and hydrochemical properties of salt-dissolution zones, Palo Duro Basin, Texas Panhandle—preliminary assessment: The University of Texas at Austin, Bureau of Economic Geology Geological Circular No. 87-2, 32 p.

Dutton, A. R., 1986, Hydrogeochemistry of the vadose zone in unmined and reclaimed deposits at Big Brown mine, East Texas: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 160, 37 p.

Dutton, A. R., and Orr, E. D., 1986, Hydrogeology and hydrochemical facies of the San Andres Formation, Texas Panhandle and eastern New Mexico: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 157, 58 p.

Dutton, A. R., and Simpkins, W. W., 1986, Hydrogeochemistry and water resources of the Triassic Lower Dockum Group in the Texas Panhandle and eastern New Mexico: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No 161, 51 p.

Chapters/Sections

Jorgensen, D. G., Downey, J., Dutton, A. R., and Maclay, R. W., 1988, Region 16, central nonglaciated plains, *in* Back, W., Rosenshein, J. S., and Seaber, P. R., eds., Hydrogeology: Geological Society of America, The Geology of North America, v. O-2, p. 141–156.

Internet/Web Sites/Modules

Scanlon, B. R., Goldsmith, R. S., and Dutton, A. R., 2001, Conceptual model of groundwater recharge to the major aquifers in Texas: The University of Texas at Austin, Bureau of Economic Geology, http://www.twdb.state.tx.us.

Abstracts

Dutton, A. R., 2008, Preservation of paleoisotopic record of Hydrologic History in aquifer systems (abstract): Geological Society of America Abstracts with Programs, v. 40, No. 6, p. 121.

Roberts, M. M., and Dutton, A. R., 2008, Time series resistivity analysis to map hydrologic activity and predict karst conduits in unsaturated limestone above the recharge zone of the Edwards aquifer, central Texas (abstract): Geological Society of America Abstracts with Programs v. 40, No. 6, p. 382.

Dutton, A. R., 2007, Integration of Information on Groundwater Age Dating, Recharge Rates, and Results of Groundwater Modeling of the High Plains (Ogallala) Aquifer in the Texas Panhandle (abstract): Geological Society of America Abstracts with Programs, v. 39. No. 6, p. 188.

Leal, L. R. B., Dutton, A. R., da Silva, H. M., and Barbosa, J., 2007, Geological structure and hydrogeology in a Precambrian fissured-karst aquifer of the northeast Brazil: Contribution to management and defining protection zones (abs.): Geological Society of America Abstracts with Programs, v. 39, No. 6, p. 478.

Roberts, Marla, and Dutton, A. R., 2007, Time Series Resistivity Analysis of Water Content Variation in Karst Terrain, Edwards Limestone, San Antonio, Texas: in Proceedings, Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP) April 1-5, 2007: U.S. Environmental Protection Agency, p. 874–888.

Mitchell, E. J. R., and Dutton, A. R., 2007, Specific Storage Results for the Edwards Aquifer Using the Seismic Efficiency Method (abs.): National Ground Water Association, 2007 Groundwater Summit, April 23-26, 2006, Proceedings p..

Dutton, A. R., and Symank, Leigh, 2006, Hydrogeologic evolution of the convergence zone between freshwater and saline basinal groundwaters, Wilcox Group, Central Texas, Gulf of Mexico Coastal Plain, USA (abstract): Geological Society of America Abstracts with Programs, v. 38. no. 7, p. 107

Mitchell, E., and Dutton, A. R., 2006, Method for Determining Specific Storage using Seismic Efficiencies (abstract): National Ground Water Association, 2006 Groundwater Summit, April 23-26, 2006, Proceedings p. 152.

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Symank, Leigh, and Dutton, A. R., 2006, Effects of pumping on concentration profiles in a dipping coastal plain aquifer of variable salinity, Central Texas (abstract): National Ground Water Association, 2006 Groundwater Summit, April 23-26, 2006, Proceedings p. 91.

Dutton, A. R., and Lindgren, R., 2006, Comparison of GWMAP (Modflow) and SWSIM (PLASM) models of the Edwards (Balcones Fault Zone) Aquifer for evaluation of groundwater management options (abs.): National Ground Water Association, 2006 Groundwater Summit, April 23-26, 2006, Proceedings p. 154.

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Dutton, A. R., 2005, Evolution of groundwater management rules in response to changing use of groundwater from the High Plains (Ogallala) aquifer in Texas (abs.): Geological Society of America Abstracts with Programs, v. 37, no. 7, p. 94.

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Dutton, A. R., Nicot, J.-P., 2004, Descriptive upscaling of hydraulic conductivity by lithologic mapping for modeling groundwater flow in heterogeneous terrigenous-clastic aquifers (abs.): Geological Society of America Abstracts with Programs v. 36, no.5, p.393-394.

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Dutton, A. R., 2001, Assessment of acceptable rates of withdrawal to meet groundwater conservation standards in the unconfined Ogallala aquifer, northern Texas Panhandle (abs.): Geological Society of America Abstracts with Programs, v. 33, no. 6, p. A-411.

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Dutton, A. R., Nance, H. S., and Laubach, S. E., 1994, Fault and joint spacing in a normal fault zone (abs.): Eos (Supplement), v. 75, no. 44, p. 678.

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Dutton, A. R., 1992, Ground-water ages in confined and unconfined aquifers beneath the High Plains, U.S.A. (abs.): Geological Society of America Abstracts with Programs, v. 24, no. 7, p. A241–A242.

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Dutton, A. R., and Richter, B. C., 1987, Hydrochemical distinction of contaminant sources of salinity and brine discharge from the Permian Basin regional ground-water flow system (abs.): Geological Society of America, Abstracts with Programs, v. 19, no. 7, p. 649–650.

Dutton, A. R., 1986, Ground-water-basin divides and confining mudstones control hydrogeology of Dockum Group sandstones below the Southern High Plains (abs.): Geological Society of America, Abstracts with Programs, v. 18, no. 6, p. 591.

Dutton, A. R., and Kreitler, C. W., 1985, Recharged or modified-connate water in a carbonate bed within an evaporite aquitard, Texas Panhandle? (abs.): Geological Society of America, Abstracts with Programs, v. 17, no. 7, p. 570.

Dutton, A. R., 1984, Regional ground-water flow in San Andres Formation, Texas Panhandle and eastern New Mexico (abs.): Oklahoma Geological Survey, Oklahoma Geology Notes, v. 44, no. 3, p. 83.

Kreitler, C. W., Dutton, A. R., Fisher, R. S., Orr, E. D., Senger, R. K., and Smith, D. A., 1984, Hydrogeochemical issues for high-level nuclear waste isolation in the Permian evaporites of the Palo Duro Basin, Texas (abs.): Oklahoma Geological Survey, Oklahoma Geology Notes, v. 44, no. 3, p. 79–80.

Dutton, A. R., 1983, Regional ground-water flow in San Andres Formation, Texas Panhandle and eastern New Mexico (abs.): Geological Society of America, Abstracts with Programs, v. 15, no. 1, p. 4.

Kreitler, C. W., Dutton, A. R., Fisher, R. S., Orr, E. D., Senger, R. K., and Smith, D. A., 1983, Hydrogeochemical issues for high-level nuclear waste isolation in the Permian evaporites of the Palo Duro Basin, Texas (abs.): Geological Society of America, Abstracts with Programs, v. 15, no. 1, p. 3.

Dutton, A. R., 1982, Chloride in the unsaturated zone of interfluvial-mud facies in the Calvert Bluff Formation (Eocene) at Big Brown Lignite mine, East Texas (abs.): Geological Society of America, Abstracts with Programs, v. 14, no. 7, p. 480.

Dutton, A. R., 1981, Mass transport through hydrogeologic facies in the unsaturated zone (abs.): Geological Society of America, Abstracts with Programs, v. 13, no. 7, p. 443.

Dutton, A. R., 1980, Hydrogeologic controls on the chemistry of recharging water in the unsaturated zone (abs.): Geological Society of America, Abstracts with Programs, v. 12, no. 7, p. 419.

Dutton, A. R., and Schopf, T. J., 1975, Morphologic differentiation can approximately parallel genetic differentiation in the ectoproct Schizoporella errata (abs.): Biological Bulletin v. 149, p. 425.

Lecturing

Workshops

Dutton, A. R., Convener, Second Joint Bahia-Texas Karst Workshop, July 24 & 25, 2006, UTSA 1604 Campus, Workshop conducted jointly by the Center for Water Research and the Instituto de Geociências, Universida de Federal da Bahia (UFBA), Brazil.

Dutton, A. R., Convener, Joint Bahia-Texas Karst Workshop, July 18 & 19, 2005, UTSA 1604 Campus, Workshop conducted jointly by the Center for Water Research and the Instituto de Geociências, Universida de Federal da Bahia (UFBA), Brazil.

Short Courses

Groundwater Modeling. 40-hr Continuing Education Short Course, presented to San Antonio Water Systems. October 2006 – January 2007. UTSA 1604 Campus.

Introduction to Groundwater Modeling using MODFLOW· Focus on GAM Models. Continuing Education Short Course, presented at Texas Groundwater 2004 Conference. November 17, 2004. Texas State Capitol Extension

Characterization of Subsurface Contaminant Plumes at Oil and Gas Exploration and Production Sites: presented as part of a short course titled "Curso Sobre Contaminatión de Hidrocarburos en Suelo y Agua Subterránea, Fundamentos de Restauración," sponsored by Pemex Refinación; Centro de Geociencias, Campus Juriquilla, Querétaro; and Universidad Nacional Autónoma de México (UNAM). September 10, 2003

Evaluation of hydrogeologic investigation techniques for tracking subsurface contaminant plumes of crude oil - case studies: presented to Regulation, Assessment, and Remediation of Oil Field Exploration and Production Sites, Texas and Louisiana: Short Course, Dutton, A. R., Convenor, 52nd Annual Meeting of the Gulf Coast Association of Geological Societies, November 2, 2002

Groundwater Flow Model Training, presented to Stakeholders in the Central Carrizo-Wilcox aquifer GAM model, Austin, Texas, February 12, 2003.

Training in the use of Processing Modflow as a tool for studying the Ogallala aquifer: Short Courses presented to Panhandle Groundwater Conservation District and the North Plains Groundwater Conservation District, White Deer, Texas, May & December 2000.

Introduction to hydrogeology: Master's Class, Universidad Iberamericana, Campus Leon, June 1999.

Other University Teaching

Lecture with field demonstration on site assessment of abandoned oil-field pollution: GEO 367L & GEO 382C, Groundwater field methods, Luling, Texas (2003, 2001; other topics previous years).

Unsaturated zone hydrology, The University of Texas at Austin, GEO391, Spring 1995.

Other Lectures and Addresses

The Edwards (Balcones Fault Zone) Aquifer, Central Texas: A regional resource with multiple numerical models: presented to Harte Seminar, Texas A&M University-Corpus Christi, September 21, 2007, Corpus Christi, Texas..

Where recharging meteoric water meets seawater and basinal brine: The convergence of hydropressured and geopressured zones beneath the Central Texas Gulf Coastal Plain: presented to Hydrogeology Class, Texas A&M University-Corpus Christi, September 21, 2007, Corpus Christi, Texas.

Analysis and Evaluation of Uvalde County Groundwater Well Field Simulations: presented to San Antonio Water Systems Citizen Advisory Panel, January 9, 2007, San Antonio.

Interaction of surface water and groundwater: presented to CE 3723 Applied Hydrology, Department of Civil Engineering, The University of Texas at San Antonio, April 26, 2006.

Hydrogeology of the Edwards aquifer, Texas – USA: UT Pan American University, Feb. 17, 2006.

Hydrogeology of the Edwards aquifer, Texas – USA: Workshop on Pesquisas Hydrogeológicas no Estado da Bahia (Brazil) e no Texas (EUA): Exploração e Gestão, December 13, 2005, Salvador, Bahia, Brazil.

Groundwater isotopic evidence for paleorecharge in U.S. High Plains aquifers: Workshop on Pesquisas Hydrogeológicas no Estado da Bahia (Brazil) e no Texas (EUA): Exploração e Gestão, December 13, 2005, Salvador, Bahia, Brazil.

Modeling of Hydrogeologic Constraints on Availability of Water Resources in the Ogallala (High Plains) Aquifer, Texas High Plains: presented to Environmental Science Colloquium (EES3723), The University of Texas at San Antonio, February 11, 2005.

Interaction of surface water and groundwater: presented to CE 3723 Applied Hydrology, Department of Civil Engineering, The University of Texas at San Antonio, May 2, 2005.

Introduction to groundwater modeling: presented to Analysis of environmental problems (CE6973), Department of Civil Engineering, The University of Texas at San Antonio, October 27, 2004.

Hydrodynamic Convergence of Hydropressured and Geopressured Zones, Central Texas, Gulf of Mexico Basin, USA: presented to Environmental Science Colloquium (ES6941), The University of Texas at San Antonio, September 17, 2004.

Hydrogeologic and hydrochemical framework of the Gulf Coast aquifer in Wharton and Matagorda Counties, Texas. Texas Groundwater 2004 Conference. Austin. November 18, 2004

Groundwater Flow Model Training, presented to Stakeholders in the Central Carrizo-Wilcox aquifer GAM model, Austin, Texas, February 12, 2003.

Convergence between hydropressured and geopressured zones in the Wilcox Group, Central Texas Gulf Coast: presented at Gulf Coast Association of Geological Societies, Austin, Texas, October 31, 2002

E & P drilling fluid disposal facilities in Texas an Louisiana: Analogs for environmental assessments of abandoned sites: presented at Gulf Coast Association of Geological Societies, Austin, Texas, November 1, 2002

Effect of Pleistocene depositional heterogeneity on movement of a subsurface crude-oil spill, San Patricio County, South Texas: presented at Gulf Coast Association of Geological Societies, Austin, Texas, November 1, 2002

Use of Virtual Reality modeling tools for visualization of aquifer geometry: presented to attendees of the 52nd annual meeting of the Gulf Coast Association of Geological Societies, October 31 and November 1, 2002

Predictive modeling results of the Central Carrizo-Wilcox Aquifer GAM Model: presented at Stakeholder Advisory Forum for the Central Carrizo-Wilcox Model, Bastrop, Texas, October 22, 2002

Hydrogeology of the Ogallala aquifer in the Texas Panhandle: presented to Bureau of Economic Geology Advisory Panel, Austin, Texas, March 7, 2002.

Hydraulic conductivity of the Ogallala aquifer beneath the Southern High Plains: presented at the Southern High Plains Ogallala Aquifer GAM Model Stakeholder Advisory Forum, Lubbock, Texas, February 21, 2002.

Groundwater flow velocities in the vicinity of the Pantex Plant: presented at Pantex Public Meeting hosted by U.S. Department of Energy and Texas Natural Resource Conservation Commission, Panhandle, Texas, May 7, 2001.

Approaches to using groundwater examples in teaching math and science in Texas Middle Schools: presented to Texas Environmental Education Network, Austin, Texas, April 10, 2001.

Development of a groundwater model of the Ogallala aquifer: prediction of 2000 to 2050 saturated thickness for Panhandle Regional Water Planning Group (Region A): presented to Texas Water Development Board, Austin, Texas, January 31, 2001.

Evaluation of groundwater availability in the Ogallala aquifer in Roberts County, Texas: presented at Panhandle Groundwater Conservation District, Public Hearing on Groundwater Permit Application, White Deer, Texas, December 13, 2000.

Overview of airborne geophysical surveying to map subsurface salinity: presented to Delegation from Solution Mining Research Institute, Austin, Texas, October 18, 2000.

Development of a groundwater model of the Ogallala aquifer: prediction of 2000 to 2050 saturated thicknesses for Panhandle Regional Water Planning Group (Region A): presented to Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, October 20, 2000.

Use of a ground-water management model for the Edwards aquifer, Barton Springs segment: presented at Board of Barton Springs Edwards Aquifer Groundwater Conservation District, Austin, Texas, May 10, 2000.

Numerical simulation of groundwater availability in the Carrizo Wilcox aquifer in Central Texas: 2000 to 2050 projections: presented at National Ground Water Association-Southwest Focus Conference, Austin, Texas, May 18, 2000.

Virtual reality models: presented to Panhandle Producers and Royalty Owners Association, Austin, Texas, May 2, 2000.

Results of modeling groundwater in the vicinity of the Pantex Plant—-consideration of possible fate and transport of TCE contamination in the Ogallala aquifer: presented at public forum sponsored by the U.S. Department of Energy and the Texas State Energy Conservation Office (SECO), Panhandle, Texas, March 15, 2000.

Postaudit of groundwater model for lower Gulf Coast aquifer: SB 1 Regional Planning Group K, Bastrop, Texas, February 10, 1999.

Summary of selected Texas aquifers: Delegation from Commision Nacional del Agua, Mexico, at the Bureau of Economic Geology, Austin, Texas, August 17, 1998.

Determination of Texas oil fields eligible for variance from AOR requirements in UIC regulations for Class II injection wells: RRC Regional Technology Transfer Conference, Midland, Texas, May 12, 1998 and Dallas, Texas, May 20, 1998, May 1998.

Determination of Texas oil fields eligible for variance from AOR requirements in UIC regulations for Class II injection wells: RRC Regional Technology Transfer Conference, Midland and Dallas, Texas, May 12, 20 1998.

Application of environmental assessment to remediation of abandoned oil field sites: RRC Regional Technology Transfer Conference, Houston, Texas, April 7, 1998.

Groundwater flow and sources of salinity in the fractured Cretaceous chalk of north-central Texas, U.S.A.: British Geological Survey, Hydrogeology Group, Wallingford, Oxfordshire, March 26, 1998.

Groundwater flow and sources of salinity in the fractured Cretaceous chalk of north-central Texas, U.S.A.: Department of Geological Science, University College London, March 27, 1998.

Site Assessment and Remediation at Special Needs Sites: RRC District Office Cleanup Coordinators 1998 Annual Meeting, February 11, 1998.

Hydrology of the unsaturated zone: UT Dept. of Geological Sciences Field Hydrology Class, May 19, 1997.

Application of soil-gas surveys to site assessment--case study at Chiltipin Creek, Texas: UT Department of Geological Sciences, Hydrogeology Brown Bag Lecture, April 18, 1997.

Hydrogeology of fractured Austin Chalk, SSC site, Ellis County, Texas: presented to Southern Methodist University Department of Geological Sciences, February 1995.

Hydrogeology of fractured Austin Chalk, SSC site, Ellis County, Texas: presented to Dallas Geological Society, January 1995.

Theory and methods of hydrologic measurements in the unsaturated zone: presented to The University of Texas at Austin, Department of Geological Sciences, hydrogeology field course class, May 1994.

Hydrogeologic techniques of the Superconducting Super Collider (SSC) site, Ellis County, Texas: project briefing presented to Texas National Resources Laboratory Commission and SSC Laboratory, De Soto, Texas, July 1993.

Theory and methods of hydrologic measurements in the unsaturated zone: presented to The University of Texas at Austin, Department of Geological Sciences, hydrogeology field course class, May 1993.

Sources and ages of ground water in confined and unconfined aquifers beneath the U.S. High Plains: presented to Baylor University, Department of Geology, Waco, Texas, April 1993.

Sources and ages of ground water in confined and unconfined aquifers beneath the U.S. High Plains: presented to University of Houston, Department of Geosciences, Houston, Texas, April 1993.

Hydrogeologic studies for site characterization: case study of ground-water flow in the Austin Chalk at the Superconducting Super Collider site, North Texas: presented to Association of Desk and Derrick Clubs, Petroleum Extension Service, The University of Texas at Austin, Austin, Texas, January 1993.

Paleohydrology of the nonglaciated Great Plains: an isotopic and age-dating study: presented to the University of South Louisiana, Department of Geological Sciences, Lafayette, Louisiana, and to The University of Texas at Austin, Department of Geography, Austin, Texas, 1992.

Paleohydrology of the nonglaciated Great Plains: 14C and 36C age-dating of confined and unconfined aquifers: presented at The University of Texas at Austin, Department of Geological Sciences, Austin, Texas, 1992.

Simulation of ground-water particle paths in an alluvial aquifer overlying the Superconducting Super Collider (SSC) Site, Texas: presented to The University of Southwestern Louisiana, Department of Geology, Lafayette, Louisiana, 1992.

Overview of regional hydrogeologic investigations, Superconducting Super Collider site, Ellis County, Texas: presented to The University of Texas at Austin, Department of Geological Sciences, Austin, Texas, 1992.

Isotopic evidence for paleohydrologic evolution of ground-water flow paths, southern Great Plains, United States: presented to the University of Kansas, Department of Geology, and Kansas Geological Survey, April 1991.

Paleohydrologic evolution of basin-scale flow and associated transport based on the geochemical record: presented at Geological Society of America Penrose Conference on Flow and Associated Transport in Basins: Driving Forces, Coupling and Geologic Controls, 1991.

Hydrogeology of the Carrizo-Wilcox aquifer in Central Texas: Bureau of Economic Geology research seminar, The University of Texas at Austin, Austin, Texas, February 1, 2002.

Development of a model for the Panhandle Regional Water Planning Group, hydrogeology and groundwater resources of the Ogallala aquifer, northern Texas Panhandle: Bureau of Economic Geology research seminar, The University of Texas at Austin, Austin, Texas, February 2001.

Introduction to hydrogeology of Texas: Bureau of Economic Geology research seminar, The University of Texas at Austin, Austin, Texas, August 2000.

Paleohydrology of the nonglaciated Great Plains: isotopic evidence and age-dating: presented at the Bureau of Economic Geology Colloquium, 1992.

Summary of ground-water investigations at the Superconducting Super Collider site, North Texas: presented at the Bureau of Economic Geology Colloquium, 1992.

Ground-water hydrogeology of an alluvial aquifer at the Superconducting Super Collider site, Ellis County, Texas: presented to The University of Texas at Austin, Bureau of Economic Geology, 1991.

Paleohydrology and Geochemistry of Permian Basin Brines: presented to The University of Texas at Austin, Bureau of Economic Geology, 1988.

Hydrogeology of salt water sources in Tom Green County, Texas: presented to The University of Texas at Austin, Bureau of Economic Geology, 1986.

Ground Water in Lower Dockum Group: presented to The University of Texas at Austin, Bureau of Economic Geology, 1965.

Hydrogeology of the Salt-Dissolution Zone, Texas Panhandle: presented to The University of Texas at Austin, Bureau of Economic Geology, 1984.

Hydrogeology of the San Andres Formation, Texas Panhandle and East New Mexico: presented to The University of Texas at Austin, Bureau of Economic Geology, 1982.

Congressional, Legislative, and Special Committee Testimony

Texas Senate Natural Resources Committee. Comments on S.B. 1541 on permanent management of low-level radioactive waste, March 22, 2001.

Expert witness (groundwater) testimony, 1997, Licensing hearing for the Texas Low-Level Radioactive Waste Disposal Facility.

Graduate Student Committee Participation

Thesis committee for Fahad Al-Najrani, Supervisor, The University of Texas at San Antonio, Texas, 2008-present

Thesis committee for Daniel Lupton, Supervisor, The University of Texas at San Antonio, Texas, 2007-present

Thesis committee for Amber Patrick, Member, The University of Texas at San Antonio, Texas, 2006-present

Thesis committee for Lee White, Member, The University of Texas at San Antonio, Texas, 2007-present.

Dissertation committee for H. Aaron Collier, Supervisor, The University of Texas at San Antonio, Texas, 2005-present

Dissertation committee for Evelynn Mitchell, Supervisor, The University of Texas at San Antonio, Texas, 2005-2007

Dissertation committee for Mike Lewis, Member, The University of Texas at San Antonio, Texas, 2005-2008

Dissertation committee for Sheba Mary Thomas, Member, The University of Texas at San Antonio, Texas, 2005-2007

Thesis committee for Marla Morales Roberts, Supervisor, The University of Texas at San Antonio, Texas, 2005-2007

Thesis committee for Leigh Anne Symank, Supervisor, The University of Texas at San Antonio, Texas, 2005-2007

Thesis committee for Jennifer White, Member, The University of Texas at San Antonio, Texas, 2005-2006

Thesis committee for Newfel Mazari, Member, The University of Texas at San Antonio, Texas, 2006-2008.

Thesis committee for Katherine Kier, Supervisor, The University of Texas at Austin, Austin, Texas, 2002-2003

Dissertation committee for H. Seay Nance, Co-supervisor, The University of Texas at Austin, Austin, Texas, 2001-2004.

Dissertation committee for Ming-Juan Shi, Member, The University of Texas at Austin, Austin, Texas, 2001-2005.

Thesis committee for Thet Naing, Co-supervisor, The University of Texas at Austin, Austin, Texas, 2001-2002.

Dissertation committee for Matthew Uliana, Member, The University of Texas at Austin, Austin, Texas, 1996-2000.

Dissertation committee for Robert E. Mace, Co-supervisor, The University of Texas at Austin, Austin, Texas, 1993-1998.

Thesis committee for Matthew Wickham. Co-supervisor. The University of Texas at Austin, Austin, Texas, 1990-1991.

Dissertation committee for Barry Hibbs, Member, The University of Texas at Austin, Austin, Texas, 1988-1991.